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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/672,200	09/27/2000	Gregory L. Slaughter	5181-57500	8325

7590 05/31/2005

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EXAMINER	
LAO, SUE X	
ART UNIT	**PAPER NUMBER**
2194	

DATE MAILED: 05/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/672,200	SLAUGHTER ET AL.	
	Examiner	Art Unit	
	Sue Lao	2194	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *9/16/04, 2/10/05*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15,17-31,33-37,51-59 and 61-72* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12,15,17-28,31,33-37,51-58,61,64-66 and 69-71* is/are rejected.

7)☒ Claim(s) *13,14,29,30,59,62,63,67,68 and 72* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/16/04, 2/10/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-15, 17-31, 33-37, 51-59 and 61-72 are pending. This action is in response to the amendment filed 9/16/2004. Applicant has amended claims 1, 17, 33 and 51, canceled claims 16, 32, 38 and 60, and added claims 61-72.

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claim 1-15, 17-31, 33-37, 51-59 and 61-72 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The language of independent claims 1, 17, 33, 51, 61, 65, 70 and 71 raises a question as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a useful, concrete and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101.

Independent claims 1, 17, 33, 51, 61, 65, 70 and 71 do not appear to require any computer hardware to implement the claimed invention. These claims appear to define the metes and bounds of an invention comprised of software alone. There is no support (i.e., explicitly claimed computer hardware) in the body of the claims. The system/device claims appear to be comprised entirely of software. Software alone, without a machine, is incapable of transforming any physical subject matter by chemical, electrical, or mechanical acts. If the "acts" of a claimed process manipulate only numbers, abstract concepts or ideas, or signals representing any of the foregoing, the acts are not being applied to appropriate subject matter. In re Schrader, 22 F.3d 290 at 294-95, 30 USPQ2d 1455 at 1458-59 (Fed. Cir. 1994). Transformation of data by a machine constitutes statutory subject matter if the claimed invention as a whole accomplishes a practical application. That is, it must produce a "useful, concrete and tangible result." State Street, 149 F.3d 1368, 1373, 47 USPQ2d 1596 at 1600-02 (Fed. Cir. 1998).

MPEP 2106. State Street required transformation of data by a machine before it applied the "useful, concrete, and tangible test." However, State Street does not hold that a "useful, concrete and tangible result" alone, without a machine, is sufficient for statutory subject matter. State Street, 149 F.3d at 1373, 47 USPQ2d at 1601.

Claims 1-15, 17-31, 33-37, 51-59 and 61-72 are rejected under 35 U.S.C. 101 because the claimed invention, appearing to be comprised of software alone without claiming associated computer hardware required for execution, is not supported by either a specific and substantial asserted utility (i.e., transformation of data) or a well established utility (i.e., a practical application).

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-15, 17-31, 33-37, 51-59 and 61-72 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-15, 17-31, 33-37, 51-59 and 61-72 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted

elements are computer hardware necessary to execute the claimed software and render the invention operative.

6. Claims 51-59 and 71-72 are non-statutory because they are not tangibly embodied. Claims 51 and 71 recite "a carrier medium" (line 1). A carrier medium such as carrier waves are incapable of being touched or perceived absent the tangible medium through which they are conveyed. Therefore, claims 51-59 and 71-72 are non-statutory.

7. Claims 1-11, 17-26, 33-36, 51-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brandle et al (U S Pat. 5,218,699) in view of Anderson et al (Professional XML, pages 497-511, 542-543).

As to claim 1, Brandle teaches a method for remotely invoking functions (remote procedure calls) in a distributed computing environment, comprising:

a client (application 100) generating a message (remote procedure call), wherein the message includes information representing a computer programming language (high level language, col. 3, lines 37-39) method call (procedure block 52);

the client sending the message to a service (remote router application 118), wherein the service is configured to perform functions on behalf of the client (execute service procedures 126); and

the service performing a function on behalf of the client in accordance with the information representing the computer programming language method call included in the message (execute service procedure 170, 172). See col. 7, line 4 – col. 8, line 4; fig.s 4-6.

Brandle does not teach the computer programming language is Java, nor Java method call, Java method implemented on, Java method on.

Anderson teaches a method for remotely invoking functions in a distributed computing environment (XML-RPC), wherein the computer programming language is Java, and including Java method call (Java client), Java method implemented on the service (Java XML-RPC server, page 511, fig.). See page 508 section XML-RPC to

page 511, last para.. Therefore, it would have been obvious to include programming language Java, Java method call and Java method implemented on the service into Brandle. One of ordinary skill in the art would have been motivated to combine the teachings of Brandle and Anderson because this would have provided an updated technology and allowed communications between programs running on disparate operating environments / heterogeneous systems.

As to claim 2, Brandle teaches the service performs the function on behalf of the client asynchronously to processing on the client (asynchronous mode). Col. 9, line 31 – col. 10, line 18.

As to claim 3, Brandle teaches the client comprises a client method gate (service director 102, remote router service 106 and data mapper 112), wherein said generating a message comprises: the client method gate receiving the computer programming language method call (call 104) from a process (application 100) executing within the client; and the client method gate generating the message for the client (create communication block for transmission, step 156). Col. 8, lines 54-68.

As to claim 4, Brandle teaches the client method gate sending the message to the service (transfer data including service procedure). Col. 8, line 63 – col. 9, line 8.

As to claims 5, 6, 35, 36, 54, 55, Java is a well known distributed object-oriented execution environment with remote procedure call capability, as taught by Anderson (page 511, fig.). In view of the combined teaching of Brandle and Anderson, running a client application/process in a virtual machine / JMV would have been obvious.

As to claim 7, Brandle teaches the service comprises one or more computer programming language methods executable within the service (service procedures 126), wherein said performing a function comprises executing a computer programming language method in accordance with the information representing the computer programming language method call included in the message (procedure and parameters). Col. 8, line 57 – col. 9, line 19.

As to claim 8, note discussion of claim 7 and Brandle further teaches the information representing the computer programming language method call includes an identifier of the method call (procedure/call identifier), and wherein said performing a

function comprises: regenerating the method call in accordance with the identifier of the method call included in the information representing the method call (extract cal identifier and parameters and invokes, col. 9, lines 1-16); and executing a computer programming language method in accordance with the regenerated method call (execute service procedures 126, step 172).

As to claim 9, Brandle teaches the information representing the computer programming language method call further includes one or more parameter values of the method call (parameter block 58), and providing the one or more parameter values from the information representing as parameter values of the method call (mapper extracts data/parameters). Col. 9, lines 9-16.

As to claim 10, Brandle teaches a service method gate (remote router application 118, data mapper 120 and service director 122) configured to provide an interface to computer programming language methods of the service by receiving messages (transferred) and invoking methods specified by the messages (steps 166, 168, 170, 172), and wherein said regenerating the method call is performed by the service method gate. Col. 8, line 57 – col. 9, line 19.

As to claim 11, Brandle teaches performing a function generates results data (results), the service providing the generated results data to the client (steps 174 - 190).

As to claim 17, note discussions of claim 1 for functions of generate, send and perform and claim 3 for receive. In Brandle, the first two functions are provided in a client node and the last two in a service node. It would have been obvious to implement the client functions by a client device and the service functions by a service device.

As to claims 18, 20, note discussion of claims 2 and 4, respectively.

As to claim 19, it is covered by claim 3 except for the information in the message representing the method call received from the process, which is met by Brandle (remote procedure call including procedure identifier, see discussion of claim 1).

As to claims 21, 22, note discussions of claims 5 and 6.

As to claims 23-26, note discussion of claims 7-9, 11, respectively.

As to claim 33, it is covered by claims 1 and 3. Note the equivalence and access/receiving. It would have been obvious to implement the client and the method gate functions, co-located in a client node, in a device.

As to claim 34, note discussion of claim 2.

As to claim 51, it is a program product claim of claim 1, thus note claim 1 for discussion. It would have been obvious to embody the method steps in a carrier medium for the purpose of portability.

As to claims 52, 53, note discussions of claims 2 and 3, respectively.

As to claims 56, 57, note discussions of claims 8 and 9, respectively.

8. Claims 12, 27, 28, 37, 58, 61, 65, 66, 70, 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brandle et al in view of Anderson et al as applied to claims 1, 17, 33 and 51 and further in view of Duault et al (U S Pat. 5,428,781).

As to claim 12, 37, 58, Brandle teaches storing the generated results data (results) to a space service (queue 116) in the distributed computing environment; and the client accessing the stored results data from the space service (application retrieves results from the queue, col. 7, lines 33-36, 64-66; col. 10, lines 11-13).

Brandle does not teach providing an advertisement for the stored results data to the client, wherein the advertisement comprises information to enable access by the client to the stored results data.

However, Duault teaches communication through queues, including providing an advertisement/notification (E-NE signal) for stored data to a client to enable access by the client to the stored data (col. 3, lines 14-28). Therefore, it would have been obvious to provide an advertisement/notification for the stored results data (stored data) to the client to enable access by the client to the stored results data in Brandle. One of ordinary skill in the art would have been motivated to combine the teachings of Brandle and Duault because this would have rendered the execution of service procedures more fault tolerant (col. 2, lines 38-40).

As to claim 27, note discussion of claim 12, steps of storing and providing.

As to claims 28, 66, note discussion of claim 12, step of client accessing.

As to claim 61, note discussion of claims 1 and 12.

As to claim 65, note discussion of claims 17 and 27.

As to claim 70, note discussion of claims 33 and 37.

As to claim 71, note discussion of claims 51 and 58.

9. Claims 15, 31, 64, 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brandle et al in view of Anderson et al and Duault et al as applied to claims 12, 27, 61, 65 and further in view of Cuomo (U S Pat. 6,185,614).

As to claims 15, 31, 64, 69 Cuomo teaches using Uniform Resource Identifiers (URIs) to access data/resources (col. 4, lines 4-36). Therefore, it would have been obvious to a URI to identify the stored results (resources to application) of Brandle. One of ordinary skill in the art would have been motivated to combine the teachings of Brandle and Cuomo because this would have provided the capability of returning dynamically generated results (Cuomo, col. 2, lines 6-11).

10. Claims 13, 14, 29, 30, 59, 62, 63, 67, 68, 72 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 101 and 112, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

11. Applicant's arguments filed 9/16/2004 have been considered but are moot in view of the new ground(s) of rejection.

Regarding applicant's argument that queue 116 of Brandle is a software queue, not a service in a distributed computing environment (remarks, page 22, last paragraph; page 24, 1st-2nd paragraphs), the examiner respectfully disagrees. Queue 116 of Brandle stores generated results data, which provides a queueing service. The client and the server of Brandle locate on separate nodes connected via a network (fig. 4 and denoting text), which is a distributed computing environment. Therefore, the queueing service provided through the queue 116 meets a service in a distributed computing environment as claimed. The client, the server and queue of Brandle are located in the

distributed computing environment. As to the argued "not a service device accessible by other devices" (page 24, 2nd para.), this is not recited in the claims. See claim 12 for example.

The argued 'information to enable access" is met by Duault who provides the empty or non-empty status of the queue to a client of the queueing service. Clearly, only knowing the information of non-empty status / data available for retrieval, the client of the queueing service retrieves the stored data. If applicant's service / space service differs from this broad and fair interpretation which is met by the combined teachings of Brandle and Duault, such difference has not been brought out by the claim language.

Regarding applicant's argument that a hardware signal of Duault does not suggest modification to the software queue of Brandle. (remarks, page 23, 1st para.). The examiner's response is that it is the teaching/concept of Duault, rather than the physical environment, that is applied to Brandle. Applicant is effectively arguing that the secondary reference cannot be bodily incorporated into the primary reference. The test for obviousness is not whether the features of one reference may be bodily incorporated into the other reference to produce the claimed subject matter but simply what the references make obvious to one of ordinary skill in the art. In re Bozek, 163 USPQ 545 (CCPA 1969); In re Richman, 165 USPQ 509 (CCPA 1970); In re Beckum, 169 USPQ 47 (CCPA 1971); In re Sneed, 710 F.2d 1544, 218 USPQ 385. In this case, it is the concept of advertising/notifying the availability of stored data as taught by Duault, that is applied to Brandle.

Regarding the argument of motivation to combine (remarks, page 23, 3rd para.) that fault tolerance in Duault come from having the scheduler implemented on multiple processors, not the E-NE signal, the examiner's response is that the fault tolerance of Duault come from the entire system of Duault, including the scheduler and the use of E-NE signal which are all integral parta of the system of Duault.

Applicant further argued that Brandle and Duault already know how to access the queue, and thus the E-NE signal does not meet "information to enable access" the stored data (remarks, page 23, last para.). The examiner respectfully disagrees. As claimed, the "information to enable access" is not specified as how to access the queue, contrary to applicant's argument. See claim 12, for example. The claim language requires "information to enable access by the client to the stored results data". The argued 'information to enable access" is met by Duault who provides the empty or non-empty status of the queue to a client of the queueing service. Only knowing the information of non-empty status / data available for retrieval, the client precedes to retrieve the stored data.

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sue Lao whose telephone number is (571) 272-3764. A voice mail service is also available at this number. The examiner's supervisor, SPE Meng-Ai An, can be reached on (571) 272 3756. The examiner can normally be reached on Monday - Friday, from 9AM to 5PM. The fax phone number for the organization where this application or proceeding is assigned is (703) 872 9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

June 25, 2005

SUE LAO
PRIMARY EXAMINER